

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended): A system for assisting the regeneration of depollution means by O₂ combustion of soot,

wherein the depollution means is associated with oxidation catalyst-forming means implementing an OSC function, constituting a supply of O₂ and integrated in an exhaust line of a motor vehicle diesel engine, in which the oxidation ~~catalyst~~ catalyst-forming means constituting a supply of O₂ is located upstream of the depollution device in the exhaust line and the engine is associated with common rail means for feeding its cylinders with fuel,

the system comprising means for analyzing the running conditions of the vehicle and for comparing them with predetermined threshold values, to control the engine in a first regeneration ~~mode of operation~~ operating mode by molecular O₂ combustion of the soot with a lean mixture when running conditions are above the threshold values, or in a second regeneration operating mode by molecular O₂ combustion of the soot implementing sequences in which engine operation alternates between stages of rich mixture operation and of lean mixture operation when conditions are below the threshold values,

so that during rich mode, oxygen is released from the oxidation ~~catalyst~~ catalyst-forming means to promote combustion of reducing agents, so as to raise temperature levels at an inlet to the depollution ~~device~~ means.

2. (Previously presented): A system according to claim 1, wherein the depollution means comprise a particle filter.

3. (Previously presented): A system according to claim 2, wherein the particle filter includes a catalyst.

4. (Previously presented): A system according to claim 1, wherein the depollution means comprise a NOx trap.

5. (Previously presented): A system according to claim 1, wherein the fuel includes an additive that is to be deposited together with the particles with which it is mixed on the depollution means in order to facilitate regeneration thereof.

6. (Previously presented): A system according to claim 1, wherein the depollution means are impregnated with an SCR formulation, performing a function of oxidizing CO/HC.

7. (Previously presented): A system according to claim 1, wherein the engine is associated with a turbocharger.

8. (Previously presented): A system according to claim 1, wherein the running conditions are determined from at least one of:

- the load on the engine;
- its running speed;
- the speed of the vehicle; and
- the temperature level in the vehicle exhaust line.

9. (Currently amended): A method of assisting the regeneration of a depollution device by O₂ combustion of soot,

_____ wherein the depollution device is associated with an oxidation catalyst implementing an OSC function, constituting a supply of O₂ and integrated in an exhaust line of a motor vehicle diesel engine, in which the oxidation catalyst constituting a supply of O₂ is located upstream of the depollution device in the exhaust line and the engine is associated with a common rail for feeding its cylinders with fuel,

_____ the method comprising:

- analyzing the running conditions of the vehicle, and
- comparing them with predetermined threshold values,
- controlling the engine
 - in a first regeneration ~~mode of operation~~ operation mode by molecular O₂ combustion of the soot with a lean mixture when running conditions are above the threshold values, or

- in a second regeneration operating mode by molecular O₂ combustion of the soot implementing sequences in which engine operation alternates between stages of rich mixture operation and of lean mixture operation when conditions are below the threshold values,

so that during rich mode, oxygen is released from the oxidation catalyst to promote combustion of reducing agents, so as to raise temperature levels at an inlet to the depollution device.

10. (Previously presented): A method according to claim 1, wherein the depollution device comprises a particle filter.

11. (Previously presented): A method according to claim 10, wherein the particle filter includes a catalyst.

12. (Previously presented): A method according to claim 9, wherein the depollution device comprises a NO_x trap.

13. (Previously presented): A method according to claim 9, wherein the fuel includes an additive that is to be deposited together with the particles with which it is mixed on the depollution device in order to facilitate regeneration thereof.

14. (Previously presented): A method according to claim 9, wherein the depollution device is impregnated with an SCR formulation, performing a function of oxidizing CO/HC.

15. (Previously presented): A method according to claim 9, wherein the engine is associated with a turbocharger.

16. (Previously presented): A method according to claim 9, wherein the running conditions are determined from:

- the load on the engine;
- its running speed;
- the speed of the vehicle; and/or
- the temperature level in the vehicle exhaust line.

17. (New): A method according to claim 9, wherein the oxidation catalyst-forming means implementing an OSC function constituting a supply of O₂ stores oxygen in the form of at least one of cerine CeO₂ and a composite oxide of cerium and zirconium.

18. (New): A system according to claim 1, wherein the oxidation catalyst-forming means implementing an OSC function constituting a supply of O₂ stores oxygen in the form of at least one of cerine CeO₂ and a composite oxide of cerium and zirconium.